

6-7 Quadratic Inequalities

Graph

ex1

$$y > x^2 + 4x + 1$$

$$V(-2, -3)$$

$$y\text{-int } (0, 1)$$

$$a.o.s. \quad x = -2$$

$$(-1, -2)$$

$$(-1, -2)$$

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Graph

Do:

$$y > -x^2 + 4x - 2$$

$$V(2, 2)$$

$$y\text{-int } (0, -2)$$

$$(1, 1)$$

$$a.o.s. \quad x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

$$x = 2$$

Graph

ex2

$$y < 3x^2 - 6x + 1$$

$$V(1, -2)$$

$$y\text{-int } (0, 1)$$

$$a.o.s. \quad x = 1$$

$$(3, 10)$$

$$(3, 10)$$

$$(3, 10)$$

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$$(3, 10)$$

Solving Quadratic Inequalities

Ex 1

$$x^2 - 4x + 3 > 0$$

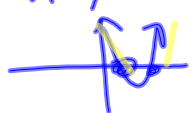
Graph the related fn $y = x^2 - 4x + 3$

$$x^2 - x - 3x + 3 = 0$$

$$x(x-1) - 3(x-1) = 0$$

$$(x-3)(x-1) = 0$$

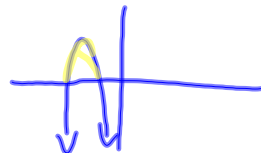
$$x=3 \quad x=1$$

$$\{x \mid x < 1 \text{ or } x > 3\}$$


Ex 2

$$0 \leq -4x^2 - 17x - 15$$

$$-3 \quad -1.25$$



$$\{x \mid -3 \leq x \leq -1.25\}$$

Ex 3

$$x^2 + 3x + 9 > 0$$



p333-334

15, 17, 19, 31-41 odd, 42

(when solving, use a calc. to graph)